CLAIMS

1.   A method for removing MPEG-2 chroma upconversion artifacts in a video stream comprising:

5   detecting a presence of artifacts in an incorrectly upsampled MPEG-2 video stream and

removing the presence of artifacts resulting in an artifact free video stream.

10   2.   The method of claim 1 wherein the detection of the presence of artifacts is comprised of:

obtaining a first set of frequency detection values for a chroma component of a plurality of pixels from a plurality of even numbered rows;

obtaining a first set of vertically lowpass filtered frequency detection

15   values for a chroma component of a plurality of pixels from a plurality of even numbered rows;

obtaining a second set of frequency detection values for a chroma component of a plurality of pixels from a plurality of odd numbered rows;

obtaining a second set of vertically lowpass filtered frequency

20   detection values for a chroma component of a plurality of pixels from a plurality of odd numbered rows;

calculating a first sum of an absolute value of the first set of frequency detection values;

calculating a first sum of an absolute value of the first set of vertically

25   lowpass filtered frequency detection values;

calculating a second sum of an absolute value of the second set of frequency detection values;

calculating a second sum of an absolute value of the second set of vertically lowpass filtered frequency detection values;

30   calculating a first absolute value difference between the first sum of the absolute value of the first set of frequency detection values and the

second sum of the absolute value of the second set of frequency detection values;

calculating a second absolute value difference between the first sum of the absolute value of the first set of vertically lowpass filtered frequency detection values and the a second sum of an absolute value of the second set of vertically lowpass filtered frequency detection values; and

confirming the presence of artifacts if a ratio between the first absolute value difference and the second absolute value difference is larger than about a threshold.

3.   The method of claim 2 wherein the threshold is 10.

4.   The method of claim 2 wherein the first and second sets of frequency detection values and the first and second sets of lowpass filtered frequency detection values are obtained by performing a partial discrete fourier transform on a set of vertically aligned chroma data samples.

5.   The method of claim 1 wherein removing the presence of artifacts comprises lowpass filtering a set of chroma data.

6.   The method of claim 5 wherein the lowpass filtering of the set of chroma data comprises:

doubling a current chroma data sample to be filtered;

adding a row above chroma data sample from directly above the current chroma sample;

adding a row below chroma data sample from directly below the current chroma sample; and

dividing by 4.

7.   A video system for producing a corrected progressive MPEG-2 output from an MPEG-2 compressed video source comprising:

a) an MPEG-2 compressed video source;

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b) a progressive MPEG-2 decoder having an input coupled to an output of the MPEG-2 compressed video source;

c) a buffer having an input coupled to an output of the progressive MPEG-2
10   decoder;

d) a video processing module having an input coupled to an output of the buffer; and

15   e) a progressive display having an input coupled to an output of the video processing module.

8.   A video system for producing a corrected progressive MPEG-2 output from an MPEG-2 compressed video source comprising:
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a) an MPEG-2 compressed video source;

b) a interlaced MPEG-2 decoder having an input coupled to an output of the MPEG-2 compressed video source;
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c) a deinterlacer having an input coupled to an output of the interlaced MPEG-2 decoder;

d) a buffer having an input coupled to an output of the deinterlacer;
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e) a video processing module having an input coupled to an output of the buffer; and

f) a progressive display having an input coupled to an output of the video
35   processing module.

9.   A video system for producing a corrected progressive MPEG-2 output from an MPEG-2 compressed video source comprising:

a) an MPEG-2 compressed video source;

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b) a interlaced MPEG-2 decoder having an input coupled to an output of the MPEG-2 compressed video source;

c) a buffer having an input coupled to an output of the interlaced MPEG-2

10   decoder;

d) a deinterlacer/video processing module having an input coupled to an output of the buffer; and

15   e) a progressive display having an input coupled to an output of the video processing module.